

MISSOURI. Conservationist

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Our Unique Conservation Legacy

Today Missouri is known for world-class outdoor adventures (hunting, fishing, hiking, wildlife watching, canoeing and boating, target shooting, camping). Missouri boasts a truly wonderful uniqueness with:

- » More than 14 million acres of forest land;
- » Prairies, caves; and
- » Enormous diversity and quality of water resources—springs, rivers, streams, ponds, wetlands and lakes.

Our state supports a citizen population of 6 million. Missourians enjoy an accessible network of lands, buildings and facilities with a prominent mission—helping citizens enjoy and understand our state’s forest, fish and wildlife resources. It is important to note these lands and facilities occur in rural areas and also in the hearts of major cities.

Conservation—wise use—of forest, fish and wildlife resources has a proven and important track record. These resources have a tremendous positive impact at the individual, family, community and state levels. Combining the numbers generated by hunting and fishing, wildlife watching, and forest industries shows the importance of conservation in our state.

- » Supports approximately 95,000 Missouri jobs;
- » Involves many citizens through active participation; and
- » Generates positive business revenue to the state of over \$11.4 billion annually.

History clearly shows the wisdom in Missouri citizens’ approach to conservation. In the early 1930s, it is reported there were fewer than 2,000 deer. Turkey were rarely seen, and beaver, bear, elk and many other animals were rare or already gone. Missouri, a state that once supported the largest sawmill in the world, had depleted the vast Ozark forests. Streams and the aquatic resources they supported had experienced major declines. From that low point, a groundswell of citizen support for conservation developed.

In 1935, concerned citizens from around the state met to discuss what could be done. From that meeting, the idea of a non-political conservation agency and a management approach based on technical research emerged. This concept, presented as a constitutional amendment, received overwhelming citizen support. Today, our state’s conservation sys-



Director Robert Ziehmer assists with a tranquilized black bear for a research project in southwest Missouri.

tem of governance is studied as the “model approach” across the nation.

Missouri conservation is unique—unique in its history, unique in the way the Conservation Commission derives its funding and authority from the people, and unique in the passion and commitment of Missourians to perpetuate this legacy. The Show-Me State’s conservation efforts have a broad management base giving consideration to forests, fish and all species of wildlife.

Missourians have accomplished some amazing conservation results.

- » Restored and sustained dozens of wildlife and fisheries resources;
- » Transformed forestry into a sustainable industry;
- » Created a system devoted to serving private landowners—both rural and urban;
- » Invested in the hearts of major urban areas to teach the value of the outdoor world;
- » Developed an accessible network of lands, buildings and facilities with a prominent mission; and
- » Partnered the entire way with citizens.

The journey of conservation is not complete. Many modern-day conservation issues create challenges to our state’s forest, fish and wildlife resources.

It is together as a team—Conservation Department and citizens—that we will build on past successes and continue advancing Missouri as a national leader in forest, fish and wildlife management. Thank you for your continued interest, support and active involvement in Missouri’s conservation movement. I encourage all Missourians—young and old alike—to look for ways to become more actively involved in conservation efforts during 2011.

Robert L. Ziehmer, director



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SAFETY FIRST

I just want to expand upon your article *Tips for a Safe and Ethical Deer Season* [November]. You properly state "If you hunt on private land, be sure to obtain permission from the landowner and respect his or her property as if it were your own." However, some may construe that to mean they can hunt any public or state property. That is not true. I work at a state facility that is surrounded by multiple acres of woods. We occasionally encounter a hunter. Not only is hunting forbidden here, but merely trespassing or having a weapon will get you in legal trouble.

*Joanne M Schrader, Youth Specialist II
Fulton Treatment Center, Fulton*

ALONE NO MORE

My husband and I frequently go to Lone Elk Park to enjoy the elk there. So this summer, when I rode my motorcycle to Harrison, AR, I made sure one of my early morning rides went by Buffalo

National River park. How thrilling, as the early morning fog lifted, to spy the elk herd grazing.

From reading my *Conservationist* magazine, I now learn that within the year, my amazing Conservation Department is bringing 150 elk to my state! [*Missouri's History With the Elk*; December]. Thank you, MDC.

Linda Warren, Florissant

BLUE STAR NATIVES

I want to thank you for acknowledging veterans and the folks who memorialize them with Blue Star memorials [*Shepherd of the Hills*; November]. The memorials attract people from all walks of life who may not realize what the memorials are about. Thanks for bringing that to your readers attention.

You mentioned in the article that the memorial was "surrounded by . . . native stone and native wildflowers." The last time I checked, marigolds and portulaca were not considered

"native wildflowers" by your standards. I appreciate the Department's support of landowners planting natives, but please be vigilant in your editing and educational efforts.

Hopefully the plan for the Shepherd of the Hills Hatchery memorial is to include native wildflowers next year.

Ted C. Fry, via Internet

Manager's note: Currently, there is indeed a combination of native and non-native species around the memorial. While the long-term goal of the memorial landscaping is to have a completely native landscape, I and the SOTH Garden Club made a conscious effort to temporarily use some non-native plants for two main reasons:

1) *Some of the native plants, which were originally planted in the landscaping, died or were accidentally removed by visitors. This left several unsightly 'bald' spaces that took away from the look and honor of this memorial. Having already expended budgeted funds for native plants for this project, the SOTH Garden Club stepped up and donated the non-native plants to fill the spaces until native plants could be obtained in the next budget cycle.*

2) *Plants around the margins of the memorial were intentionally planted with non-natives like marigolds to take the brunt of accidental walking and small children (who did not know better than to pick our flowers). The ultimate goal is indeed to have 100 percent Missouri/Ozark native plants for the landscaping of this memorial. However, this may take a couple of years to attain. I hope that you get the opportunity to see our memorial in person in the next few years to see the transition to the native landscape. Until then, we want to keep our promise to honor veterans by making this memorial as beautiful as possible using both native and non-native species.—John Miller, visitor center manager*



The Blue Star Memorial at Shepherd of the Hills that was featured in the November 2010 issue has a combination of native and non-native plants.

MISSOURI Conservationist

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Save Time and Money with e-Permits for Hunting and Fishing

Missouri is moving to a new system that will make buying hunting and fishing permits more convenient and help keep the cost of permits low.

Beginning March 1, Missourians will be able to purchase sport hunting, fishing and trapping permits online through the e-Permits System and print them at home. Online permit buying has been available in Missouri since 2002. However, under the current online system, buyers receive only confirmation at the time of purchase. They use this confirmation while waiting to receive the actual permits through the mail, which can take up to two weeks. E-Permits will enable turkey and deer hunters to buy permits, print them and use them immediately.

Hunters will still be able to buy permits from traditional permit vendors under e-Permits if they prefer. Vendor-issued permits will continue to be printed on the current material until July 2012. The current material used to print permits will be phased out between July 2012 and July 2013. After that all permits, whether issued by vendors or printed at home, will be on paper.

Deer and turkey tagging procedures will change under e-Permits. The main difference will

be that permits no longer will include a removable transportation tag. Instead, the permit itself will be the transportation tag. These permits will have months printed along one edge and dates on another edge. Hunters will notch the month and day when they shoot their game and then attach the permit to the animal.

E-Permits will not be printed on traditional yellow permit stock, so hunters will need to provide a means of attaching them to harvested game. Hunters are encouraged to put e-Permits inside clear plastic sandwich bags, laminate them or protect them in some manner and attach them to deer or turkeys with string, twist-ties, wire, plastic cable ties or tape. Protecting paper permits in this way will make it easier for hunters to write confirmation numbers on permits when Telechecking deer and turkeys.

Because e-Permits printed on paper will not be waterproof, hunters will need to put them inside clear plastic sandwich bags or other protective covers.

E-Permits will enable the Conservation Department to make better use of several million dollars in taxpayer money over the next five

years as it phases out POS software, hardware and special permit material.

When fully implemented, e-Permits are expected to save approximately \$500,000 in state funds annually. Hunters and anglers will gain the flexibility to choose between buying permits from vendors or online 24 hours a day.

Low permit cost is one more reason Missouri is a great place to hunt and fish. For comparison, Missouri residents pay \$12 for an annual fishing permit, while residents in the eight neighboring states pay an average of \$20.80 for the same privileges. Missouri's \$17 Resident Any-Deer Permit is a fantastic bargain compared to the average of \$46.63 for equivalent privileges in surrounding states.

Deer Harvest Update

Hunters checked 188,205 deer during the 11-day November portion of the firearms deer season. Top harvest counties were Benton with 3,390 deer checked, Howell with 3,246 and Macon with 3,195.

Harvest numbers were up in northern Missouri compared to last year. This was mostly because weather delayed last year's corn harvest, giving deer thousands of acres of hiding cover during deer season. This year's weather favored an early harvest, making deer more visible to hunters.

The Department's goal is to maintain deer numbers at levels that serve the best interest of citizens. To ensure that we can meet these goals in the future the Department continually seeks public comment. In recent years the Department has taken several steps to enhance efforts to manage the state's deer herd. Some of these efforts have proven effective.

- Low-cost antlerless tags
- Four-point rule
- Free landowner tags
- Telecheck
- Managed deer hunts on public land and urban areas
- Urban season

Hunters play a critical role in managing deer numbers. Deer hunting is a powerful economic engine, too. Nearly 500,000 deer hunters spend more than \$750 million each year directly related to deer hunting. Deer hunting generates more than \$1 billion in overall business activity in Missouri annually and supports more than 11,000 jobs.

2010 Fishing Records Wrap-up

In 2010 Missouri's world-class fishing was spotlighted through anglers certifying six state records, four of which are confirmed or potential world records.

The action began Jan. 19, when 15-year-old Joshua Lee Vance of Bolivar gilled the 4-pound, 5-ounce white sucker from the Niangua River. His was not only the first fishing record of 2010, it was the first white sucker entered in the "alternate methods" category.

On April 9, when Nicholas Wray caught a 2-pound, 4-ounce black bullhead from a Cass County farm pond using a jug line. The bullhead nudged aside the previous record by 4 ounces. Missouri's pole-and-line record for black bullhead is 4 pounds, 11 ounces.

Things really heated up in July, when John

West, of Republic, caught a 58-pound, 10.4-ounce striped bass at Bull Shoals Lake in Taney County. At that time, the International Game Fish Association (IGFA) line-class record for inland waters was 47 pounds, 11 ounces.

A few days later, Greg Bernal, of Florissant, caught a 130-pound blue catfish on a handheld fishing pole while fishing on the Missouri River north of St. Louis. The fish was out of the water for nine hours and died before weighing, and likely had lost considerable weight. Nevertheless, the monster topped Missouri's previous blue catfish record by 27 pounds. The IGFA has certified Bernal's fish as an all-tackle world record. The previous world record was a 124-pounder taken from the Mississippi River near Alton, Ill.

July's third record was a 99-pound flathead catfish caught with a bank pole by Robert Neal

Davidson, of Mokane.

George Pittman Sr. landed an 8-pound, 3-ounce shortnose gar while fishing with a rod and reel at Lake Contrary in his hometown of St. Joseph. It topped the previous Missouri state record—a 1995 catch from Lower Big Lake, by 3.5 pounds. At the time, the IGFA recognized a 7-pound, 1-ounce fish from Texas as the world all-tackle record.

Entry forms and rules for registering Missouri state-record fish are available at www.mdc.mo.gov/node/6106. A list of Missouri fishing records is available at www.mdc.mo.gov/node/6103. The Conservation Department also has a Master Angler Program to recognize notable catches that fall short of records. For qualifying lengths and weights, visit www.mdc.mo.gov/node/6039.



ASK THE OMBUDSMAN

Q: I have a cedar tree that is full of what I call bagworms. How do I get rid of them before they damage my tree?

A: You are correct that the little, conical-shaped "bags" on your tree are made by bagworms, which are the larvae of a moth, the bagworm moth, that is found throughout Missouri. The tough, silken bags, which are camouflaged with bits of cedar branches, are where the female bagworm will lay between 500 and 1,000 eggs. Hatching in the spring, the small larvae will emerge from the bags and begin feeding on the trees' foliage. Each larva will soon construct its own bag to protect itself as it feeds. The larvae will eventually reach a length of about 1 inch. Feeding larvae can harm your tree by removing the foliage. Handpicking and destroying the bags before mid-May is effective, as is spraying the tree with insecticide when the young larvae are emerging in late May to early June. For more information, visit: <http://extension.missouri.edu/explorepdf/agguides/pests/g07250.pdf>.

Q: I noticed an adult bald eagle eating carrion on the road several times recently. Is it in danger? Can you do anything for it?

A: Bald eagles are becoming more common in Missouri. Thousands of the birds spend each winter here, and we now have close to 200 active nests each spring. In addition to catching fish, bald eagles will scavenge for food, including road-killed animals. It is becoming a more common sight to see eagles eating carrion along Missouri's roads. Motorists should avoid any birds on the roadway if that can be done safely. Call your local conservation agent to report any eagles killed or injured by vehicles. It is a violation to possess or transport injured or dead eagles without a permit.



Bald eagle

Ombudsman Tim Smith will respond to your questions, suggestions or complaints concerning Department of Conservation programs. Write him at PO Box 180, Jefferson City, MO 65102-0180, call him at 573-522-4115, ext. 3848, or e-mail him at Ombudsman@mdc.mo.gov.

“No M0re Trash!” Contest

Missouri elementary, middle and home school students K-8 are invited to help in the fight against litter—and to have creative and educational fun—by participating in the 2011 “Yes You CAN Make Missouri Litter Free” Trash-Can Decorating Contest. The annual contest is sponsored by the Missouri Department of Conservation (MDC) and

the Missouri Department of Transportation (MoDOT) as part of the state’s ongoing “No M0re Trash!” campaign to raise awareness about Missouri’s litter problem and to discourage littering.

“Littering isn’t just ugly, it hurts wildlife, it costs Missourians millions of tax dollars each year, and it’s illegal,” said MDC No M0re Trash! Coordinator Joe Jerek. “Birds, fish, turtles and

other animals get tangled in litter, such as plastic six-pack holders and fishing line, and it can kill them. Litter and other trash can also poison fish, birds and other wildlife.”

Jerek added that MoDOT spends more than \$5 million each year cleaning litter from Missouri’s roadsides and MDC spends almost \$1 million a year to clean litter from conservation areas and other department locations.

The 2011 “Yes You CAN Make Missouri Litter Free” Trash-Can Decorating Contest encourages students to join in the fight against litter by decorating and displaying a large trash can with the “No M0re Trash!” logo and a litter-prevention message using a variety of creative media. There is no entry fee. Participating classes and groups must submit an entry form and photo of the completed can. Schools may submit one entry in each competition category: K-2, 3-5 and 6-8. Only Missouri schools, including home schools, are eligible. Entries are judged based on creativity, adherence to contest rules and effective use of theme and logo. Deadline for entries is March 1.

The first-place entry from each category receives a \$100 award. All first-place winners are eligible for a grand prize of \$500 and a trophy.

Contest rules, entry forms, the “No M0re Trash!” logo, 2010 contest winners, facts on litter and educational information are available online at www.nomoretrash.org. For more information, call 573-522-4115, ext. 3362, or e-mail nomoretrash@mdc.mo.gov.

Take Part In Our Furbearer Program

Great conservation work happens with the help of citizens. MDC has several furbearer programs that need your assistance.

» Badger Study

We are still collecting badger sightings and carcasses as part of a study to learn more about their distribution, food habitats, reproduction, etc. Call 573-882-9909 to report badger sightings or to turn in a carcass.

» Otter and Bobcat Study

Our plan is to measure trapper effort and sex/age data from harvested bobcats and otters. This information will allow us to build a database to learn about abundance, survival and harvest rates of these species so we can ensure an effective and sustainable harvest strategy. If you trap, you have received a packet and letter asking you to return a lower canine tooth from trapped otters and trapped or shot bobcats. Your cooperation with this project is greatly appreciated.

» Big Critter Weigh- In

We will begin keeping information on record weight furbearers taken during the legal hunting or trapping seasons here in Missouri. We will have a certified scale at each of the fur auctions this winter, so if you catch an exceptionally large raccoon, bobcat, muskrat, etc., bring it to one of the auctions for a chance to hold a Missouri furbearer weight record. No awards will be given, but we will be publishing the results and plan to keep these records on file.



Become a Master Naturalist

Co-sponsored by the Missouri Department of Conservation and University of Missouri Extension, the Master Naturalist™ program helps you become a well-informed community leader dedicated to improving natural resources.

To become a Master Naturalist, enroll in a 50-hour course on Missouri’s natural resource ecology and management. Once your training is complete, join your local chapter. To support your chapter, plan to donate 40 hours of natural resource-based volunteer service and achieve eight hours of continued education each year. Volunteer service falls into three categories: stewardship, education and interpretation, and citizen science.

Spring training starts in February and March in Camdenton, Columbia, Rolla and West Plains.

Cost for the training varies by chapter. Visit www.monaturalist.org for more information.

Video Helps Navigate MDC Website

The Conservation Department has a new, 3-minute YouTube video to help web surfers navigate the MDC website with greater speed and ease. Web Developer Chris Haefke introduces viewers to tips and tricks, such as using the new search tool designed to find the content you want among the treasure troves of information about outdoor recreation and forest, fish and wildlife management. For the quick and easy introduction to the newly redesigned MDC website, visit www.youtube.com/watch?v=AhMAKG156fg.

Confirmed Mountain Lion Sighting

The Missouri Department of Conservation (MDC) receives dozens of reports each year from Missourians claiming to have seen a mountain lion. Of the more than 1,000 recorded reports received since 1994, only 10 have yielded enough evidence to confirm the presence of a mountain lion. A recent confirmed sighting brings that number to 11.

A landowner in Platte County, north of Kansas City, contacted the MDC with a photograph he took the evening of Nov. 26 of a mountain lion in a tree on his property.

"The photo is clearly of a mountain lion," said Rex Martensen, a wildlife damage biologist with the Department's Mountain Lion Response Team (MLRT). "We visited with the landowner, who wishes to remain anonymous, to confirm the location and to gather additional information."

Martensen added that the MLRT identified claw marks on the tree where the mountain lion was photographed and collected hair samples from where the big cat was perched for DNA testing.

"We will use the DNA results to help us identify where the cat came from," explained Martensen. "We will compare the results with our database of captive mountain lions in Missouri and also look at mountain lion DNA information from western states."

The MLRT conducts field investigations only in situations that involve human safety, or where there is potential physical evidence such as photographs, a wildlife kill, scat, hair or tracks directly linked to a sighting. The MLRT has investigated hundreds of mountain lion

Did You Know?

Conservation pays by enriching our economy and quality of life.

Conservation Pays

- » The amount of state sales tax revenue generated from fish, forest and wildlife recreation spending is about the same amount of sales tax revenue received by the Conservation Department from the one-eighth of one percent Conservation Sales Tax.
- » **\$11.4 billion** is the total economic impact of fish and wildlife recreation and the forest products industry in Missouri.
- » More than **\$1.47 million** was paid to Missouri counties in fiscal year 2009 for forest cropland payments, levee and drainage district payments, in-lieu-of-property-tax payments, and county aid road trust payments.
- » **31,700 jobs** in Missouri are supported by the forestry and wood products industry—an industry that generates more than **\$5.7 billion**.
- » **64,186 jobs** in Missouri are supported by the annual expenditures related to fish, forest and wildlife recreation.
- » **\$211 million** is spent each year in Missouri by nonresident anglers and hunters.
- » **\$1.1 billion** is generated annually from deer hunting in Missouri. This results in **\$83 million** in state and local tax revenue each year.
- » **11,824 jobs** annually are supported by deer hunting in Missouri.
- » **\$382 million** in state and local tax revenue is generated annually from fish, forest and wildlife spending.
- » **For more information** about the economics of conservation and MDC's accomplishments and expenditures, read our complete fiscal year 2009–2010 annual report at www.MissouriConservation.org/node/9760.

reports since it was created in 1996.

"More than 90 percent of reported mountain lion sightings turn out to be bobcats, house cats or dogs," Martensen said. "And most of the photos we get turn out to be doctored photographs circulating on the Internet."

He added that there have been no documented cases in Missouri of attacks on livestock, people or pets by mountain lions.

"Most mountain lions confirmed in Missouri in modern times, such as two killed on highways, are young males traveling from western states looking for new territory to the east," he said. "While mountain lions occasionally wander into Missouri from other states, there is no proof of a self-sustaining, reproducing population."

He added that the MDC has never stocked or released mountain lions in Missouri and has no plans to do so.

Mountain lions (*Puma concolor*), also called

cougars, panthers and pumas, were present in Missouri before pioneer settlement. The last documented Missouri mountain lion was killed in the Bootheel in 1927. The nearest known populations are in Wyoming, Colorado, North Dakota, South Dakota and Texas.

Mountain lions are a protected species in the state under the Wildlife Code of Missouri. The Code does allow the killing of any mountain lion attacking or killing livestock or domestic animals, or threatening human safety. The incident must be reported to the MDC immediately and the intact carcass, including the pelt, must be surrendered to the MDC within 24 hours.

To report a sighting, physical evidence or other incident, contact a local MDC office or conservation agent, or e-mail the MLRT at mountain.lion@mdc.mo.gov.

For more information on mountain lions in Missouri, visit www.mdc.mo.gov/node/3505.



Meet the Bears

A new study seeks answers about one of Missouri's most elusive wild residents.

by FRANCIS SKALICKY, photos by NOPPADOL PAOTHONG

Behind the metal grate door of the large barrel trap was 400 pounds of proof that black bears are doing well in Missouri.

Returning the inquiring stares of Missouri Department of Conservation biologists with curious looks of its own was a large animal whose appearance indicated the surrounding Webster County countryside was satisfying its creature comforts quite nicely. Its blackish-brown fur was smooth and thick. Its frame—meaty and robust.

It seems strange to call a creature this large “elusive,” yet that is exactly what black bears (*Ursus americanus*) have been to Missouri wildlife experts for a number of years. A multi-year study, currently underway, should dispel much of the mystery about this creature and replace hunches with hard facts. This information will be used to better manage one of the state’s largest wild mammal.

Seeking the Bear Facts

For several decades, Missouri’s bears have been something of an enigma for the state biologists trying to study them. Numerous sightings have provided definitive evidence that black bears live in the Show-Me State, but when it came to specific details (how many are here, are they year-round residents, etc.), things weren’t as clear.

“I don’t know how many bears we have,” said Jeff Beringer, a resource scientist with the Department of Conservation and the project leader of the bear study. “I know we have reproduction and healthy animals, but there is no way to come up with an intelligent guess—and a guess is all it would be. We need to define bear range in the state and know how many females we have, and then we can start making estimates.”

These are some of the goals of the current research project, which is a joint effort of the Missouri Department of Conservation, the University of Missouri-Columbia and Mississippi State University. It is being funded through the U.S. Fish and Wildlife Service’s Wildlife Restoration Program with help from Safari Club International Foundation.

Catch and Release

Trapping bears involves either enticing them into large, cylindrical barrel traps with bait, or catching them in baited snares.

Once trapped, the bears are tranquilized and biologists collect weights, measurements and extract a pre-molar tooth. This tooth extraction will provide valuable age and genetic information for biologists without negatively impacting the bear’s ability to chew or digest food. At the conclusion of the data collection process, the bear is transported a short distance away from the trap site where it will revive in a short period of time.

Department of Conservation biologists hope the wide range of data they’re collecting will give them a clearer picture of the bears that are showing up with increasing frequency in southern Missouri.

“We will learn the extent of occupied bear habitat and learn the habitat bears use by season,” Beringer said. “This will help us to protect and manage for bears. We will learn travel corridors, where and when bears cross highways and other roads as well as when and where bears den.”

Every bear trapped has the potential to reveal information that is useful. Studying males will help biologists understand when breeding occurs, when the males disperse and how far they travel. Studying cubs and yearlings will reveal important clues about survival rates, gender ratios and population growth. But it’s the females that hold some of the most valuable information for biologists.

“Females drive population growth,” Beringer said. “Knowing reproduction and survival rates for females will enable us to better predict population growth rates for bears.”

Bear Biology

Although the 400-pound male caught in Webster County is on the large end of the scale for a Missouri black bear, larger bears have been recorded in other states. Black bears can hear a wider range of frequencies than humans, but their greatest sensory attribute is their sense of smell. A black bear’s nasal mucosa area (the internal area of the nose which contains special sensory cells for collecting scents) is approximately 100 times the size of a human. Top these traits off with an ability to run up to 30 mph and it’s easier to understand why Missouri’s bears have been difficult to observe and study.

One trait long associated with bears—hibernating—may be something of a mischaracter-

Bear Research Timeline

Fall 2010

13 bears were trapped and radio-collared in southwest and south-central Missouri. These bears will be monitored over winter to learn more about denning habits and the time frame of winter denning in Missouri.

Spring 2011

Hair snares at select sites throughout southwest and south-central Missouri will collect data that will help biologists get better estimates of overall population and male/female ratios.

Fall 2011

13 bears will be trapped and radio-collared in southeast Missouri and those bears’ denning habits will be monitored over the winter.

Spring 2012

The field portion of this project concludes with setting of hair snares in southeast Missouri.

**Much of this trapping will take place on private land, which provides further evidence that Missourians care about conserving forests, fish and wildlife.*



MDC wildlife biologists set a trap for black bears near Seymour. Every bear trapped has the potential to reveal information that is useful.

ization: It all comes down to how one defines hibernation. In colder parts of their North American range, black bears retire to winter dens in late fall or early winter (depending on food availability) and go into a deep period of lethargy and sleep. Although bodily functions are greatly slowed, they are not suppressed to the same degree as with deep hibernators such as groundhogs or ground squirrels. Also, bears alternate periods of light and deep sleep throughout the winter and may even leave their dens for short periods when it's warm, something deep hibernating mammals don't do. Male bears, in particular, have been known to be active in winter.

History and Heritage

Seeing a bear at any time of the year in present-day Missouri is considered a wildlife viewing novelty because bears were once thought to be nonexistent in the state. However, this wasn't always the case.

When the first settlers came to Missouri, the black bear ranged across much of the state. Proof of this exists in the form of paleontological evidence predating settlement that has been found in some caves and also in countless references made by early settlers.

As Missouri became settled, the state's black bear population dwindled. Bears were shot for their meat, for the alarm they caused (whether they were harming anything or not) and for the lucrative market for bear grease that existed in the United States in the early 1800s. By the close of the 1800s, unregulated hunting and habitat destruction had diminished Missouri's bear population to remote parts of



A male black bear is shot with a tranquilizer dart in order to collect measurements.

the state. By the mid-1900s, it was thought that the only place bears could be seen in Missouri was on the state seal.

But the black bears' story in Missouri wasn't finished. From 1958 to the late 1960s, the Arkansas Game and Fish Commission trapped 254 black bears in Minnesota and Manitoba, Canada, and relocated them to Arkansas to join the small population still thought to be roaming the state. This population took hold and soon wandering bears from Arkansas began appearing in Missouri. It's thought that most of the bears seen in Missouri today are the result of Arkansas' reintroduction program.

Most, but perhaps not all of them. Before the current bear study was formally underway, some intriguing data had been discovered in southwest Missouri. Genetic information extracted from hair samples collected on a Webster County farm showed DNA that did not match that of Arkansas bears. This indicated these bears may have been the progeny of a "true" Missouri bear whose descendants had resided in the remote parts of the state and never completely disappeared.



MDC wildlife biologists also put a radio collar on the bear to study how far they travel.

Regardless of what their heritage is, there is no doubt black bears are part of Missouri's outdoors today. Since 1987, more than 800 bear sightings have been recorded in 91 counties.

Nuisance Bears

Along with the increase in bear sightings have come an increase in the reports of bear problems. Black bears are generally docile creatures. However, they're inquisitive and intelligent, and that's what can get them into trouble.

Like any wild animal, black bears are constantly searching for their next meal. When they are successful at finding food, they remember where it came from. Most problems people have with bears involve the animals raiding campgrounds, garbage bins, bird feeders, orchards and beehives. The trouble can be compounded when bears are purposely fed by people who think they're helping them survive or are trying to lure them into range for a good photo.

If a bear visits an area and is rewarded with food, it will very likely return. Though they are generally not aggressive, they are powerful and can cause damage to buildings, trailers, vehicles



and just about anything else that they view as an obstruction in their search for food.

"We have had an increase in bear/human conflicts in recent years," Beringer said. "Most conflicts can be prevented if folks do not give bears access to food or garbage."

As a means of further reducing the chance of bear/human conflicts, information collected in the current study may result in the institution of a limited black bear hunting season. This would give hunters a chance to spice their table fare with bear meat and is an example of how good conservation makes Missouri a great place to hunt and fish.

"Hunting is used to maintain bear populations at levels that are compatible with humans and to reduce nuisance conflicts when necessary," Beringer said. "Most road-killed bears and problem bears are young males. Hunting can be geared to remove a few of the males so that a population can continue to grow, but conflicts with humans are minimized."

The current bear research project provides an opportunity to improve our understanding of the biology and behavior of a unique species, to support Missourians' desire to conserve a wide range of wildlife species, and also to reduce potential nuisance issues.

"While there are many good reasons to learn more about a growing wildlife population," said Department of Conservation Wildlife Division Chief DeeCee Darrow, "one important reason is that when we know more about bear habits and bear movements in Missouri, we should be able to provide better information to citizens and to work more effectively with landowners who have bear problems. It's win-win." ▲

The black bear is transported from the trap site and wakes up a short time after being shot with a tranquilizer gun.

A photograph of maple sugaring equipment. In the foreground, a large wooden bowl is filled with yellow maple sugar granules. To its right is a wooden block mold, a rectangular box made of light-colored wood. In the background, a glass bottle with a black cap is filled with dark red maple syrup. The scene is set outdoors on a wooden surface, with a blurred background of trees and leaves.

Reviving a Sweet Tradition

Maple sugaring excitement
at Rockwoods Reservation

Native Americans and colonial Americans didn't have fancy bottles to transport maple syrup, nor was syrup their primary goal. Instead, they made blocks of sugar using wooden block molds. They poured the hot sugar in to cool and form a block. The sugar blocks could then be transported, bought, sold or traded.

Each February, nearly 3,000 people come to Rockwoods Reservation to learn the art of making maple syrup. The staff has been busy tapping trees and hanging buckets, preparing for the upcoming sugaring season.

Bundled for the frigid temperatures, families and individuals head outdoors at Rockwoods to see and take part in making this sweet gift from the forest. Maple sugaring provides a connection to the past and revives a tradition and pastime.

Many people think of maple sugaring as something unique to the northeastern United States because forests in that region have a high concentration of sugar maple trees. While that is the largest source of maple syrup in the United States, syrup can be made wherever sugar maple trees are found.

As early as the 1860 census, Missouri recorded producing as much as 18,289 gallons of maple syrup. Although Missouri's forests are typically composed of oak and hickory trees, sugar maples have always been present, and the tradition of making syrup has long been a pastime here.

Historic Treat

Before the pilgrims landed, Native Americans discovered how to collect sap and boil it down to make sugar—not syrup, as most people would conclude. There was no easy way to store liquids, but hardened, dry maple sugar was easily stored or transported for use later in the year.

After scouting an area for sugar maple trees, an entire tribe would set up a camp known as a “sugar camp,” and for the next six weeks set out to make sugar.

Native Americans, being resourceful people, learned to make the best use of these resources. To collect sap, they would make a “V” slash in the tree where sap would drip into bowls for collection. Evaporating the sap was the challenge, as they couldn't set a bowl made from birch bark over a fire. To solve this dilemma, they learned to place rocks that were heated by the fire into the bowls to cook the sap. When the early colonists arrived, they learned this trade from the Native Americans and ventured to make their own. As more people arrived in the colonies, better resources ultimately changed how maple sugar was made.

Unlike the Native Americans, the colonists had access to metal equipment. This led to the creation of a three-kettle system in which sap could be boiled directly over a fire. They found that by using three kettles, sap could be processed into sugar at a much quicker rate. As pure sap began to change consistency in the first kettle, it was then ladled into the second kettle and fresh sap was added back into the first kettle. In this way, they always had the last kettle full of nearly completed sugar.

Additionally, metal taps were invented in 1860, which allowed a small hole to be drilled into the tree. This proved to yield higher amounts of sap by directing the flow straight into buckets, instead of running down a tree.

By 1858, flat-bottom pans were found to be more efficient in the evaporation process, which led away from the use of the three-kettle system. Though they did not know that they were practicing better conservation, the use of these new resources forged better yields and better management of the natural resources.

Better conservation practices became important as more and more people began making their own maple sugar. Cane sugar was too expensive for most people to buy due to a tax placed on it; therefore, maple sugar was a desired commodity. Many colonists made far more maple sugar than they could use themselves, sometimes as much as 1,000 pounds per family. This excess was valuable to the early settlers as it provided some income or could be traded at local stores for other food and supplies.



JAMES FASHING

Children can participate in upcoming maple sugaring programs at Rockwoods Reservations. See Page 15 for details.

Shortly before 1890, the import tax on white cane sugar was removed, and this sugar became cheaper to purchase than maple sugar and soon outsold it. As the demand for maple sugar decreased, the maple industry was forced to change.

Sugar to Syrups

Making maple sugar was no longer profitable, so sugar farmers started making maple syrup instead. From 1890 to 1950, maple syrup was the primary product produced by sugar farmers.

With the advances in technology by the 1950s, however, scientists mastered the art of making sugar from corn, and shortly thereafter created high fructose corn syrup. It wasn't long before new corn-based, waffle syrups were produced. These products were artificially colored and flavored to mimic real maple syrup and were much cheaper to purchase. This holds true even today.

Soon the sale of maple-flavored corn syrups surpassed the sale of real maple syrup and sugar farmers were again forced to change what they produced. Maple producers now have capitalized on the market by creating additional maple products, such as maple butter and candies, that still keep the need for this natural resource important today.

To ensure that this skill stays profitable, maple farmers have become even more efficient in the way they collect and process sap. Coincidentally, these methods also use the best management practices of our natural resources, maintaining the health of these trees for future generations.

Right
Maple sap is filtered in preparation for making maple syrup.



Below
Children view a demonstration of the three-kettle system in which sap is boiled directly over a fire to be turned into sugar.

Sustainable Sugaring

Conservation means wise use and maple farmers have done just that. Now, instead of using larger metal taps that require drilling large holes into trees, new smaller-diameter “health spouts” have been created. These new spouts have proven to be less invasive and allow the tree to heal more quickly once removed. With these advanc-



es, the proper use of the resource has proven vital in maintaining the trees' health and viability.

To harvest sap from a sugar maple tree in a sustainable way, the tree needs to be at least 10 inches in diameter. Tapping a tree smaller than this can cause harm to the tree, taking away vital nutrients it needs for growth. Much like a person cannot donate blood until they are old enough, a small tree is vulnerable to "donating" sap before it is large enough. Doing so heightens the odds of the tree becoming sick and possibly dying. Here at Rockwoods Reservation, we have been able to tap and harvest sap from the same sugar maple trees for the past 10 years. This is due to proper conservation techniques.

You don't have to have a grove of sugar maple trees in your backyard to become a producer of maple syrup, sugar or candies. All it takes is one tree at least 10 inches in diameter. A typical tree this size can produce anywhere from 5-15 gallons of sap in a given season. While it does take 40 gallons of sap to make one gallon of syrup, just one tree can produce as much as a quarter-gallon to a half-gallon of syrup. With a little bit of work, families can bundle up and head outdoors in the middle of winter and produce the perfect amount of syrup for a pancake breakfast.

Another family favorite is making and eating "sugar-on-snow." This delicious treat is made by heating maple syrup beyond the syrup stage. When ready, the hot liquid is poured onto snow where it instantly turns into chewy taffy. This thrills children as they see candy formed instantly, as if by magic!

Laura Ingalls Wilder wrote in her books about her family making sugar-on-snow during the season and how delicious it was. According to Robert Frost, sugar-on-snow parties were a time to celebrate spring's arrival. Today, most maple producers keep this tradition, as well as the art of making maple syrup, alive by holding maple sugar festivals. They share their secrets of the sugar-making process and provide sugar-on-snow to their visitors as a way to remember this fun pastime.

Join the Party

While our forests are not thick with sugar maple trees, and maple syrup production is nowhere close to what is produced in the Northeast, Missourians have a long tradition of making



DAN ZALENKA

maple sugar, and it still helps connect families to the natural world. Here at Rockwoods Reservation, we are continuing this tradition.

Join us Feb. 5 from 10 a.m.–3 p.m. for our Maple Sugar Festival, where we'll show you what it takes to become your own backyard sugarer. This event is free and open to the public. We'll show you how to tap a tree, what equipment to use and how to turn sap into syrup and other maple products. Your family can try making sugar-on-snow and enjoy a taste of real maple syrup. We'll also have demonstrations of the historic three-kettle system, along with guided hikes to our sugar bush. There will be naturalists available to answer any questions you might have.

There are also special programs for school groups of 25 students or more Tuesday through Friday, Jan. 25 through Feb. 25. Reservations are required for these programs.

So bundle up your family and take part in this historic Missouri pastime. Who knows, your family might start its own tradition for future generations to enjoy. ▲

"Sugar-on-snow" is made by heating maple syrup beyond the syrup stage. When ready, the hot liquid is poured onto snow where it instantly turns into chewy taffy.

EVENT AND CONTACT INFORMATION

Rockwoods Reservation
2751 Glencoe Road, Wildwood, MO 63038
Phone: 636-458-2236

School Programs

Tuesday through Friday, Jan. 25 through Feb. 25
Reservations required

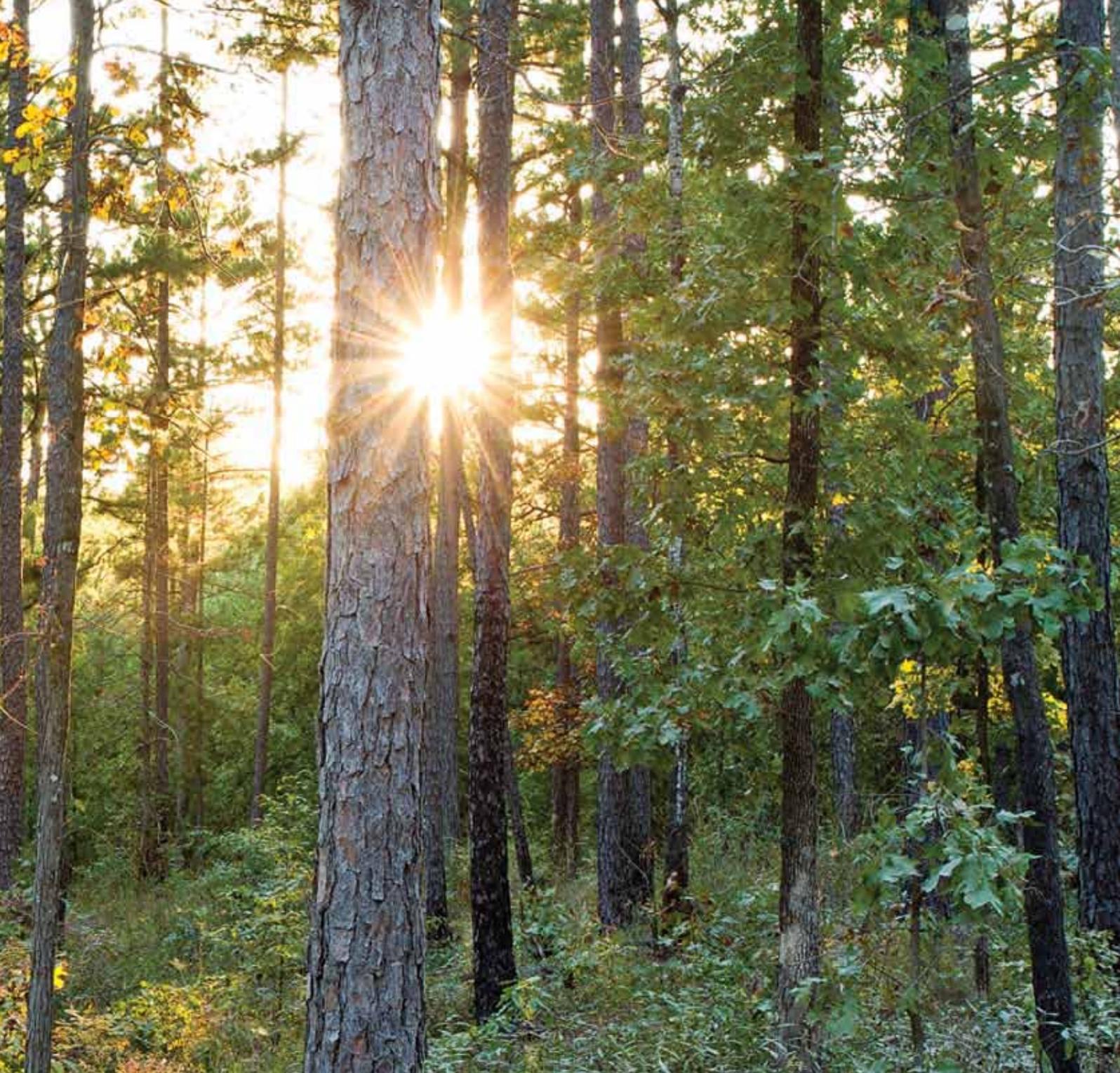


Maple Sugar Festival

Saturday, Feb. 5, 10 a.m.–3 p.m.
Free and open to the public



WHERE REAL WILD



THINGS ARE

Peck Ranch: A Landscape for Plants and Animals

by CANDICE DAVIS
and A.J. HENDERSHOTT

photos by NOPPADOL PAOTHONG

A GENTLE BREEZE RUSTLES THROUGH PRAIRIE GRASS BENEATH A SPARSE WOODLAND CANOPY. A UNIQUE LANDSCAPE THRIVES WHERE FOREST MEETS THIN-SOILED GLADES. IN THIS MIXED HABITAT, A VARIETY OF WILD PLANTS GROW AND SUPPORT AN ARRAY OF ANIMALS. IT'S A SPLENDID PLACE WHERE THE REAL WILD THINGS ARE—PECK RANCH CONSERVATION AREA.

History Comes to Life

Peck Ranch is one of the largest wildlife management areas in the state that's managed on a "landscape natural community scale," and it offers such a tremendous plant and animal diversity, according to Wildlife Management Biologist Ryan Houf.

"Peck Ranch is a demonstration of how forestry, wildlife, protection, fisheries and resource science meld into one multifaceted management machine," Houf said.

The management machine Houf refers to began more than 50 years ago, when the Missouri Department of Conservation (MDC) began turkey restoration efforts and Peck Ranch CA was center stage to provide turkeys for trapping and relocation. The area also served as a vital research site for understanding the ecology of Missouri's remnant wild turkeys.

Forest management, prescribed fire and hunting regulations are all parts of that management machine that has supported a huge comeback for a myriad of wildlife in Missouri, such as wild turkeys, Eastern collared lizards and white-tailed deer. And it all started at Peck Ranch.

Turkeys and the Woodlands

Wild turkeys have specific habitat needs in order to thrive. Cover for nesting and brood rearing was as vital as places for turkeys to forage for nuts and green browse plants. Peck

Ranch was a great place to find forest and grassland habitats with appropriate soil and moisture. Turkey nesting cover is found in the mature grasslands or thick forest cover, and the tender growth of grasses and wildflowers make for a great place to rear a brood as they search for insects.

The forest at Peck Ranch isn't a typical forest. The ground is exceptionally rocky, the soil is thin and often the south or western hillside exposure bakes the soil to release its moisture faster than it would on other slopes. The trees that live here are shortleaf pine, post oak, blackjack oak and

chinquapin oak. The ground is lightly covered with leaves, but it also has a strong component of sedges, grasses and plants that tolerate some sunlight but enjoy shade as well. Ecologists call this a woodland.

Quail, songbirds such as blue-winged warblers and red-headed woodpeckers, and reptiles and amphibians, including the flathead snakes, king snakes, fence lizards and box turtles, also enjoy this woodland habitat.

Travis Mills, the area manager at Peck Ranch CA, says habitat diversity is the key for woodland management as well as in managing for most wildlife species. He says the rebounding wild turkey population has proven it.

MDC foresters realized some time ago that woodlands need fire, so they incorporated prescribed fire into their management of the area. The woodlands also needed some thinning to balance the system. Part of this is related to Missouri's historical logging industry. By about 1910, most of Missouri's forests had been cut heavily with little regard for sus-







BULL ELK

Partnerships Supporting Elk Restoration at Peck Ranch CA

The Conservation Department has commitments from the Appalachian Wildlife Foundation (AWF) and the Rocky Mountain Elk Foundation (RMEF) to help with the funding of elk restoration in Missouri.

Conservation Department Director Robert Ziehmer says partnerships between government and citizen conservation groups make it possible to achieve things far beyond their separate means.

The AWF has committed a minimum of \$50,000 toward costs associated with the capture, disease testing, transport, radio collaring and initial monitoring of elk in Missouri. According to the RMEF, it has raised an initial \$36,500 to begin paying for construction of an elk holding pen in Kentucky and will continue fundraising efforts.

The MDC will also collaborate with the RMEF, AWF and other conservation partners to develop a long-term conservation plan for elk in Missouri.

Missouri's restoration plan calls for releasing up to 150 elk in a 346-square-mile area spanning parts of Shannon, Carter and Reynolds counties, which includes Peck Ranch CA. MDC selected this limited restoration zone because of extensive public lands, suitable habitat, low road density, minimal agricultural activity and landowner support. The plan includes health protocols, herd management guidelines and habitat management recommendations.

The Department is working with the Kentucky Department of Fish and Wildlife Resources to trap, quarantine and transport elk from Kentucky herds to Missouri. Construction of corral traps and a holding pen in Kentucky began in December. Trapping of elk is expected to happen in January. Trapped elk will remain in Kentucky for several months to meet health-testing protocols. Once in Missouri, the relocated elk will be kept in a holding pen at Peck Ranch CA to allow them to acclimate to the area.

tained forestry. A hundred years ago, a ridge-top view like the one at Stegall Mountain on the front cover would have revealed hillside after hillside of stumps and sprouts—a stark contrast to the lush hillsides found there today.

As the land began to heal through the '20s and '30s some changes took place. Pines were replaced by red oak species that were able to stump sprout and regenerate more easily than the pine. Limited fire on the landscape didn't help the pines and allowed a forest of thick red oaks to jump up in their place.

In 1937, turkey season was closed statewide because of the dramatic decline in the wild turkey population. In response, the Conservation Commission purchased Peck Ranch for wild turkey management in 1945. In the 1940s, only 3,000 turkeys remained in the entire state of Missouri. In 1952, biologists at Peck Ranch only recorded nine turkeys, according to Houf. From the beginning of the turkey restoration program in 1954, to the spring of 1979, wild turkeys were relocated from Peck Ranch to 142 areas in 87 counties. A total of 2,611 turkeys were trapped and released in Missouri.

Woodland management continued to improve, and the wild turkey population grew in response. Foresters who paid attention to the red oak decline in the 1990s began to see the wisdom in spacing the woodland trees a bit more to give hearty trees a chance to thrive. They also witnessed how pines thrived on hot, sunny, rocky sites with poor soil, which showed pine to be the best choice for the site. Pine made a great host for the ground cover below that many species use for forage and insects.

“The wild turkey was on the brink of extinction and through management and protection they've rebounded to the point that Missouri has remained one of the leading



states in turkey numbers and harvest,” Mills said. “Peck Ranch was instrumental in the state’s success in restoration efforts through trapping and relocating—but also through woodland habitat management.”

The Glade and its Collared Lizards

A stark difference from the woodland habitat on Peck Ranch is the open glade. Glades are open rocky areas with thin soil that support a variety of sun-loving plants and animals. Ozark glades boast some plants that adapted to hot dry conditions, such as little bluestem, blazing star, dittany, pale purple coneflower, Indian paintbrush, prickly pear cactus, Missouri primrose and acres of rock-covering lichens.

The open landscape, with its sun-warmed rocks and glade-loving plants, creates the perfect habitat for Missouri’s dry-adapted animals. Ozark glades have tarantulas, striped scorpions, lichen grasshoppers and, a star among reptiles, the eastern collared lizard.

These lizards are relatively big, colorful and full of character, accord-

ing to Natural History Biologist Rhonda Rimer.

“Their bright colors are an indicator that they’re visual hunters and defenders of territory, so they certainly like the open glades,” Rimer said.

But Missouri’s collared lizards didn’t always have it easy, according to Houf. In 1982, a collared lizard survey was conducted on Peck Ranch. When no evidence of collared lizards could be found, a management plan was developed that included prescribed fires and clearing on the glades. Twenty-eight lizards were reintroduced between 1984 and 1989 on three of Stegall Mountain’s glade areas. But Houf said about 10 years

LAND MANAGEMENT

The Department is committed to continuing landscape resource management in the Ozarks for:

- Natural community restoration and to sustain forest health,
- Restoration of wildlife habitat for multiple species, and
- Providing diverse outdoor recreational opportunities for citizens

from the beginning of the release the lizards were surviving but not colonizing new glades.

Biologists discovered that the forest areas between glades were a barrier to the lizards, so they incorporated glade burns into landscape burns (a landscape burn is 500–5,500 acres) to provide better habitat. Though Missouri’s native trees have value in the right place, their shading of the glade cooled the rocks and made it hard for near-desert-adapted species such as the lizards. Cutting cedars and conducting prescribed fires opened up the glade and made life easier for collared lizards.

“After one of the first burns in 1994, lizards colonized 13 glades and in 1996, after an even larger burn, 32 glades were colonized,” Houf said.

Management of the glade spurred the growth of lizard populations and helped them recover from the lulls during the cedar encroachment days. Eastern collared lizards can now be found on most glades on Peck Ranch and surrounding glades managed by The Nature Conservancy and National Park Service.

White-Tailed Deer and Peck Ranch

In a way, Missouri's white-tailed deer could be considered nature's botanists because they sample most any plant available. The more variety available, the better their frag-

ing can be. They feed on tender vegetation and forage for nut crops, so they would "know" the plants better than any species. Management at Peck Ranch involves managing the variety of habitats in such a way that deer can take advantage of them all

—woodlands, glades and forests.

Peck Ranch also has forests with appropriate soils on northern slopes and in the bottoms. One of the natural areas, Golden Seal Natural Area, is a great example of Ozark forest habitat. Forests tend to have taller trees that

MAY APPLE

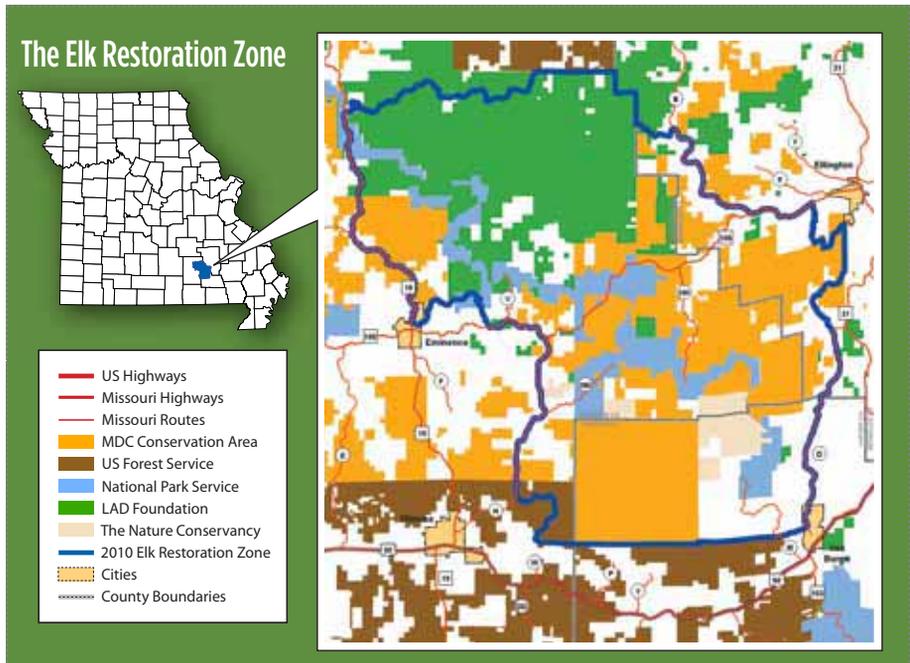


require more moisture and an assemblage of trees and other plants that don't survive the droughty glades and woodlands. Plants such as rattlesnake fern, may apples and dogwoods love what these sites have to offer.

Peck Ranch supports a good deer population, according to Houf, partly because of the harvest of declining scarlet oak trees that allowed for the oak sprouts and the planted pine to regenerate for a healthier woodland community. Ample deer browse and cover are a benefit, he said, adding that one of the area's management priorities is to not only provide early succession plants but also about 300 acres and growing of green browse supplement, which includes alfalfa, wheat, rye, ladino clover, red clover, crimson clover and orchard grass. According to Houf, it's the habitat management that's led to quality deer populations and quality deer hunts for the public.

"The management paths of the collared lizard, the wild turkey and the whitetail deer are one and the same," Houf said. "As a wildlife biologist, I take the natural community management path. Using the axe and the match to maintain natural plant community diversity and integrity ensures that we're keeping every cog and wheel for future generations to enjoy."

The fact that Peck Ranch CA is loaded with wildlife is a direct result



Key points to remember about elk restoration at Peck Ranch

- Elk is a native species to Missouri, and restoring native species holds many benefits,
- Elk in eastern states tend to be non-migratory and utilize available habitat,
- Limited number of elk will be released,
- Limited area with quality habitat,
- Elk will be radio collared and closely monitored,
- 79 percent of the elk restoration land is open to public access,
- The Department is committed to addressing elk in unwanted locations outside the restoration zone including harassment techniques, trapping and relocating and/or euthanizing elk,
- Hunting is proposed to be implemented as soon as possible after the elk become established, and
- Elk restoration will include health protocols, such as disease testing, to ensure the health of domestic livestock and other wildlife.

For more information on Missouri's elk restoration plan, visit www.mdc.mo.gov/node/10123

of the habitat. Plants unique to a glade, woodland and forest by themselves are good, but when laced together to make a landscape habitat like that at Peck Ranch, they become a perfect recipe for attracting and managing many species of wildlife. Lizards, deer and turkey aren't the only species worthy of mention; their presence is like a waving banner—something is right about this place.

There are more than 46 species of mammals, such as bobcats, grey foxes, grey myotic bats and black bears, wav-

ing the same banner at Peck Ranch. Seventy-five species of reptiles and amphibians join the 195 bird species waving that banner. Plant species like the marsh blue violet and the bristly sedge can be found on Peck Ranch. These species would not be here if the habitat was not just so.

Peck Ranch has been, and continues to be, a solid fixture in conservation history. Its resources and suitability for so many "wild things" makes it not only a diverse place, but also one of beauty and importance. ▲



FISCAL YEAR 2009-2010 Annual Report

This summary of the Annual Report highlights the Missouri Department of Conservation's accomplishments and expenditures from July 1, 2009, through June 30, 2010. These accomplishments are based on the nine goals established in *The Next Generation of Conservation*. Not only does this summary highlight the accomplishments of the Department, but it emphasizes that Missourians care about conserving forests, fish and wildlife; that we work with Missourians and for Missourians to sustain healthy forests, fish and wildlife; that we help people discover nature; that conservation makes Missouri a great place to hunt and fish; and that conservation pays by enriching our economy and quality of life.

Plants & Animals

Natural communities

At the end of FY10 there were 180 Missouri Natural Areas totaling 70,759 acres. These areas represent the best examples of healthy natural communities within the state. During the last fiscal year the Twenty-Five Mile Prairie Natural Area (120 acres) in Polk County was added to the Natural Area System.

Partnerships aid birds

In 2010, the 55 Missouri Bird Conservation Initiative (MoBCI) partner organizations were involved in nine projects across Missouri. MDC grant funds (\$100,500) were leveraged to produce a total contribution of \$345,150 dollars in cash and match for project work. Each of the nine projects involved two to seven partners who have a common goal to provide habitats suitable for a wide range of bird species. Each year MoBCI plays a bigger role in linking Missourians with national and international bird-related initiatives.

State Wildlife Grants

This year is the 10th anniversary of State Wildlife Grants (SWG). Since its inception, SWG has enabled our conservation community to make significant contributions to the restoration and management of habitats and their associated fish, forest and wildlife. Missouri has accomplished more than \$45.8 million in conservation actions since 2002 through SWG and its associated grants.

Clean Water

Stream Stewardship Trust Fund

The Stream Stewardship Trust Fund is available to restore, enhance and/or protect stream systems and associated

riparian habitats. The program and funds are administered by the Missouri Conservation Heritage Foundation, and MDC applies for grants. In FY10, five projects costing \$707,000 were approved to protect Missouri's stream and riparian corridor.

Stream Teams

Missouri Stream Team grew to 4,115 teams throughout the state. A total of 132,283 volunteer hours were committed to enhance and restore Missouri streams.

River basin management

MDC participated in various interstate working groups to implement ecosystem-based management necessary for the conservation and enhancement of natural and recreational resources of the Missouri, Mississippi and White rivers and their floodplains. MDC helped direct the implementation of \$24.6 million available through the Mississippi River Environmental Management Program (EMP) for biological monitoring and habitat restoration, and \$6.3 million available for planning efforts within the proposed Mississippi River Navigation and Ecosystem Restoration Program. Both programs are funded by the U.S. Army Corps of Engineers.



Community Conservation

Community Assistance

Through the Community Assistance Program (CAP) and the closely related Corporate and Agency Partnership Program (CAPP), MDC enters into agreements (usually 25-year) with cities, counties, state and federal agencies, businesses, foundations, schools and colleges. Under these agreements, MDC provides fisheries management at existing lakes and ponds and cooperatively develops and maintains facilities for anglers and boaters at lake and stream areas.

MDC has agreements with 117 partners for the cooperative management of 170 public lakes, 42 stream-access areas, four lake-access areas and eight aquatic resource education ponds.

Volunteer fire departments

MDC, in cooperation with the USDA Forest Service, provided \$298,894 in grants to 144 volunteer fire departments. These grants help fund protective clothing, equipment and training. We also provided equipment to fire departments through two federal programs. We obtained equipment valued at \$189,205 through the Federal Excess Property Program. The new Fire Fighter Program obtained equipment valued at \$15,515,088.

Venison donation

Conservation agents coordinate and support the Share the Harvest program with the Conservation Federation of Missouri, local charitable organizations and local meat processors. Together, these groups have supported the donations of more than 234 tons of meat during the past two years. During FY10, approximately 4,450 hunters donated 205,153 pounds of venison to less-fortunate Missourians.

Healthy Forests

Forest Resource Assessment and Strategy

Missouri's Forest Resource Assessment and Strategy (FRAS), was adopted in June 2010. FRAS is an evaluation of conditions, trends, threats and opportunities facing our forests. FRAS is guided by three important priorities: conserving working forest landscapes, protecting forests from harm and enhancing public benefits from trees and forests. This assessment will be an effective tool for conservation planning and implementation, and integrating priority projects and initiatives with partners and other agencies.

Wildfire prevention

MDC endorsed a third-party U.S. Forest Service Hazard Mitigation Grant to the Southwest Resource Conservation and Development Program. This area was hit by the January 2007 ice storm and a subsequent tornado. Heavy wood debris in area forests makes wildfire suppression more difficult and hazardous to firefighters. Educating residents about the increased fire risk and how to properly manage or dispose of damaged trees helps reduce fuels. Fire departments were also compensated for working with communities to perform risk assessments and to apply practices to reduce their fire risk.

Conservation easement grant

The USDA Forest Service's State and Private Forestry program awarded a \$190,000 grant to MDC to facilitate the protection

of high-priority privately owned forest land by providing funding to land trusts to secure conservation easements. MDC approved and paid stewardship fees and closing costs on three tracts of land, protecting 1,443 acres located in Stone, Montgomery and Warren counties. Keeping these tracts intact will help to ensure that they remain working forests, provide wildlife habitat to species requiring large blocks of contiguous forest and minimize negative effects of fragmentation (exotic plants, wildfire, insects and diseases, etc.).

Outdoor Recreation

Fishing

MDC strives to provide high-quality fishing opportunities for all Missourians. MDC's warm water hatcheries produced enough fish to meet stocking needs in Missouri in 2009. By the end of 2009, 8.9 million fish were stocked in public and private waters, including more than 144,000 keeper-sized fish stocked in 53 urban lakes.

Archery in schools

Missouri students in grades 4–12 learn target archery in class in the Missouri National Archery in the Schools Program (MoNASP). The number of schools enrolled in the program has doubled each year since MoNASP began in 2007. There are now 121 schools in the program. More than 20,000 students have participated in MoNASP, which has proven to improve kids' lives not only at school, but at home and in the community. Many schools received reimbursement grants up to \$500 toward NASP-approved archery equipment.

New hunters and anglers

MDC and volunteers provided more than 2,400 programs with instruction in hunting, fishing, trapping and shooting sports. More than 126,000 people took part in these programs. We offered about 900 Hunter Education classes, certifying 24,733 students.

Conservation Education

Master Naturalist

The Master Naturalist program added another 200 participants to this community-based, volunteer service program that totals 680 people and 11 chapters. Volunteers participated in more than 5,000 hours of advanced training and donated more than 20,000 hours of volunteer service.

Discover Nature Schools

In 2010, more than 39,000 Missouri children were connected

with nature through Discover Nature Schools instructional units and grants. Thus far, 104 schools have adopted the middle-school aquatic unit, 109 schools have taught the elementary habitats unit, and 91 have schools engaged students through our Conservation K–3 Field Trip Grant. This year a high school ecology unit, Nature Unbound, was completed, and a kindergarten through second-grade unit is in development. Conservation grants supporting Discover Nature Schools totaled \$134,724.

Citizens enjoying nature

More than 850,000 visitors explored the trails, programs and exhibits at our conservation nature and education centers throughout the state.

Landowner Assistance

Financial assistance

Approximately 328 private landowners received nearly \$520,000 in cost-share funds to implement beneficial habitat-management practices for fish, forest and wildlife resources. The funds helped install 549 individual conservation practices, impacting nearly 9,000 acres.

Partnerships

MDC developed approximately 41 partnerships with federal, state and non-governmental organizations. These relationships helped us enhance technical and financial assistance and equipment support to landowners. Through the partnerships, we assisted Missouri USDA with developing and applying \$170 million in Farm Bill conservation programs, including more than \$2 million in staff time. We also leveraged staffing, equipment and enhancement funds with conservation-habitat organizations.

Technical assistance

MDC provided timely and responsive service through 71,886 rural and urban landowner contacts, including 23,228 on-site landowner visits. We also answered 5,371 requests for wildlife nuisance assistance, including 1,000 on-site visits.

Wetland restoration assistance

Since 1992, MDC has assisted the U.S. Department of Agriculture Natural Resources Conservation Service in restoring critical wetland habitat. To date, Missouri has recorded 982 easements through the Wetland Reserve Program that covers 141,358 acres. These restored wetlands provide critical habitat and store water during floods—alleviating pressure downstream on levies, communities and crops.

Places to Go

Land acquisition

Approximately 804 acres of land in six counties were acquired by purchase and donation. Acquisitions included an addition to the recently designated Spring Creek Ranch Natural Area; land lying in close proximity to Hickory Canyons and Pickle Springs natural areas containing glade and woodland habitats; and land providing habitat for prairie-chickens and grassland wildlife.

Land management

MDC has maintained a high level of active management in the past few years on MDC lands—especially for quail and grassland birds. During FY10, MDC staff conducted habitat management activities on more than 200,000 acres of public land with an additional 95 miles of edge habitat. Staff spent more than 423,000 hours department-wide on conservation area and equipment maintenance.

Forest Best Management Practices

Implemented and maintained soil and water conservation Best Management Practices (BMPs) for all forest-management practices on conservation areas. MDC monitors and documents BMP compliance on all MDC timber sales. In addition, approximately 10 percent of these sales are audited each year. In FY10 we reviewed 67 sites on 6,623 acres for proper BMP implementation and effectiveness.

Accounting for Department Operations

Listened to Missourians

We conduct a variety of scientifically sound, unbiased and representative efforts each year in an effort to understand public opinions, expectations and recreation participation. This information guides decisions about regulations and fish, forest and wildlife management. In FY10 there were 26 activities that involved 66,752 people. These included surveys, focus groups, public meetings and ombudsman contacts.

Forestry technical-training academy

The MDC forestry-training academy provides a consistent standard of training to new forestry employees. During FY10, four academy training courses were offered, with 122 students in attendance.

Internal audits

Internal auditors issued five internal audits to ensure that public funds were expended in a responsible manner. There were no major findings.

What the Money Bought—Fiscal Year 2010

County Assistance Payments—\$1,476,299 Included payments to Missouri’s counties for levee and drainage district taxes, forest cropland payments, payments in lieu of real estate taxes and county aid road trust payments. Since 1980, more than \$14.48 million has been paid to Missouri counties in lieu of real estate taxes.

Capital Improvements—\$18,865,390 Work included fish hatchery improvements, river access development, wetland renovations, shooting range construction, nature center improvements, land acquisition transactions and renovation and repair of facilities statewide.

Fisheries—\$12,712,809 Maintained and improved sport fish populations, aquatic biodiversity and aquatic habitats. Managed 933 impoundments and stream areas for public fishing, and provided stream and lake management assistance to 7,204 private landowners. Stocked approximately 9.7 million fish in public lakes and streams.

Forestry—\$16,158,171 Fostered a healthy and growing forest resource. Examples include distributing about 3.8 million seedlings for planting to 9,700 landowners, provided forestry assistance on more than 61,000 acres of private land and to more than 200 municipalities, managing 438,700 acres of public forestland, monitoring insect and disease threats and facilitating development of the state’s forest industry.

Wildlife—\$16,953,315 Worked toward ensuring wildlife populations are in harmony with habitat and human enjoyment. Managed more than 525,000 acres of public land and implemented programs to maintain and restore natural communities and wildlife diversity across Missouri’s landscape.

Outreach and Education—\$14,796,239 Sustained Missourians’ connection to the outdoors through more than 1 million visitors to conservation nature centers and shooting-range/outdoor-education centers, nearly 500,000 subscribers to the *Missouri Conservationist* magazine, Web-based information, grants to schools exceeding \$200,000, conservation curriculums for schools, outdoor skills programs and hunter education.

Private Land Services—\$6,658,121 Helped private landowners to achieve long-term natural resource conservation objectives. Provided service through 31,400 rural and urban landowner contacts; affected 280,155 acres through technical assistance to landowners; provided habitat management workshops to 40,486 attendees; assisted USDA with enrolling 90,000 acres of cropland reflooding in the Migratory Bird Habitat Initiative; and assisted 5,607 private landowners in controlling nuisance wildlife.

Protection—\$14,845,064 Paid for law enforcement in every county as well as resource management, information, education and public service contact activities conducted by conservation agents who directly contacted more than 660,000 people. Coordinated the Share the Harvest Program through which 4,450 deer hunters donated 205,153 pounds of venison to less-fortunate Missourians. Conservation agents, along with 1,800 volunteer instructors, conducted 945 hunter education classes, certifying nearly 30,000 students.

Resource Science—\$11,455,046 Provided the science-based information needed to effectively manage Missouri’s natural resources. Resource Science monitors the status of Missouri’s fish, forests, plants and wildlife, recommends conservation actions, evaluates these actions and reports the results. In addition to surveys of fish and wildlife, tens of thousands of Missourians were contacted to determine their outdoor activities and opinions about conservation programs.

Regional Public Contact Offices—\$2,911,354 Provided regional public contact offices.

Administrative Services and Human Resources—\$26,582,346 Paid for human resources, hunting and fishing permit point-of-sale system, fiscal services, distribution center, print shop, fleet management, vehicle and equipment maintenance centers and information management and technology. Also includes other agency appropriations, Department-wide equipment and other essential services.

Design and Development—\$11,757,655 Provided engineering, architectural, surveying and construction services for conservation programs and maintenance of conservation areas and facilities.

Administration—\$4,157,143 Paid for audits, legal counsel and the coordination of strategic planning, federal reimbursement administration, environmental policy development, cultural resource reviews, public involvement and river basin management.

RECEIPTS

Conservation Sales Tax	\$93,854,189
Permit Sales	\$32,517,080
Federal Reimbursements	\$21,475,595
Sales and Rentals	\$7,047,300
Other Sources	\$2,402,727
Interest	\$512,827
Total Receipts	\$157,809,718

DISBURSEMENTS

County Assistance Payments	0.92%
Capital Improvements	11.84%
Fisheries	7.98%
Forestry	10.14%
Wildlife	10.64%
Outreach and Education	9.29%
Private Land Services	4.18%
Protection	9.32%
Resource Science	7.19%
Regional Public Contact Offices	1.83%
Administrative Services & Human Resources	16.68%
Design and Development	7.38%
Administration	2.61%

MISSOURI STATE BUDGET

Health & Social Services	38.5%
Education	27.2%
Government Services	20.6%
Transportation	10.4%
Natural & Economic Resources	2.7%
Conservation	0.6%
<i>MDC represents less than 1% of the total state budget</i>	
Total State Budget	\$24,880,542,354

Coyote

This canine's beauty and cunning make it especially rewarding to see in Missouri's outdoors.

A FEW YEARS ago, on vacation over Christmas, I woke up to a fresh snow. Still dark, I looked out the window and thought to myself, "This could be my day." I donned my camouflage hunting coat and headed down the hill to a creek bed that runs across the north end of our small farm, camera gear in tow. Although I had seen coyotes on the farm for years, I had yet to photograph one. But this day would be different as I'd never used a coyote call, always thinking that I could just intercept one of the wily critters along its hunting route. Finally, at the prodding of a friend and avid coyote hunter, I purchased an inexpensive predator call and decided to try it for the first time on that snowy morning.

The coyote (*Canis latrans*) looks much like a dog, the German shepherd in particular. Some coyotes are more reddish along the outer legs and muzzle while others are more gray or yellowish. As seen in the photograph, coyotes have intense eyes, tawny in color. Coyotes live in semi-open, brushy country, along timber edges and in open farmland throughout Missouri. Rabbits and mice are the major food source for coyotes but they also eat plants, including persimmons, of which seeds can be found in their scat. I enjoy watching coyotes feed on voles after a winter storm as they focus on the sounds beneath the snowy blanket and pounce on the unsuspecting rodents. Coyotes are mostly nocturnal, but are sometimes active during the day. They often live alone, but also are found in family groups. Coyotes mate in the spring and have litters of five to seven pups. Both parents care for the young as they learn to hunt and fend for themselves. Coyotes are considered a furbearer in Missouri and are hunted and trapped for their pelts.

I arrived at the dry creek bed, checked the wind and made my stand, back to the bank. I conducted a final check of my camera settings and waited for enough light for a photograph before I tried the call. As the sun's rays found my location, I broke the eerie silence of the snow-covered landscape with the new call. The sound sent a chill up my spine as I began scanning the area, careful not to move my head. In less than a minute a gorgeous coyote appeared before me, 50 feet away. I can't remember where it came from; it was just there. I don't know how many seconds elapsed before I regained my composure and hit the shutter release. I snapped two photos before the canine predator's innate sense of survival kicked in, prompting it to do a quick 180 and disappear into the woods, tail between its legs.

It has been at least three years since I photographed the coyote on that snowy morning, and I've tried countless times to repeat the experience to no avail. Perhaps I'm lucky, as my subsequent defeats have enhanced the memory of that unique day and my respect for the survival skills of one of Missouri's most stealthy animals.

—story and photo by Danny Brown



To learn more about coyotes, including listening to an audio recording or watching a video of a coyote, visit www.mdc.mo.gov/node/977.



Around the State

Readers from all over Missouri share their favorite photographs of conservation areas.

CONSERVATION AREAS GIVE Missourians a place to enrich their lives through the discovery and exploration of nature. In October, Conservation Department Director Robert L. Ziehmer encouraged *Missouri Conservationist* readers to share a favorite photo they had taken on a conservation area. The director selected these four photos from many beautiful options. We hope these images will inspire you to visit a conservation area. To search conservation areas, visit www.mdc.mo.gov/node/8911. To see more reader photos, go to www.MissouriConservation.org/20010.

Hughes Mountain NA ►

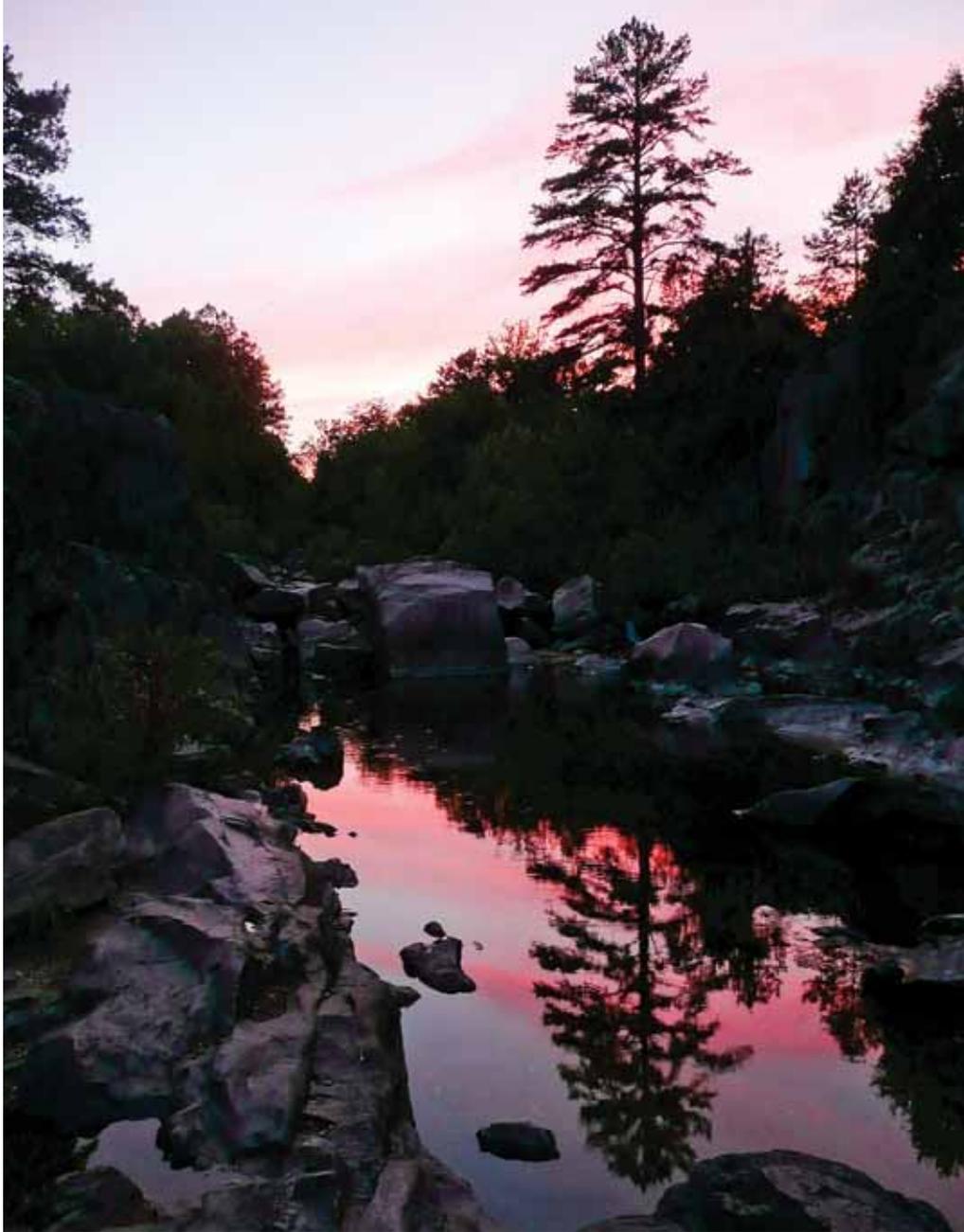
Nathan Thomas, a recent graduate from the University of Missouri-Columbia, captured this image of a collared lizard on Devil's Honeycomb Trail at Hughes Mountain Natural Area in Washington County last summer. Nathan's father, Robert, describes Nathan as "an outdoor adventure addict." Nathan's activities include rock climbing, rapelling, kayaking, canoeing, backpacking, hiking, camping and hunting. "This photo was taken on one of Nathan's adventure outings, the main purpose of which was to teach me more about using a GPS," said Robert. "Neither of the three of us had seen a collared lizard before."



Whetstone Creek CA ►

Anthony Martin of St. Louis captured this image at Whetstone Creek Conservation Area while bass fishing on Horseshoe Lake on Labor Day weekend, 2010. "I love to take pictures of wildlife and landscapes," said Martin, "and with the many acres of MDC land, that makes doing this very accessible to many people. But, I especially love going to Whetstone in the spring and fall for the bass fishing. It is a very peaceful place that is only a little over an hour from St. Louis. After taking this picture, I landed and released a dozen bass within just a few hours."





Castor River ◀ Shut-Ins NA

Matt Todd of St. Joseph captured this image at Castor River Shut-Ins Natural Area, which is part of Amidon Memorial Conservation Area. "This photo was taken during a mid-summer trip through Southeast Missouri," said Todd. "There were so many places that I had heard about, many from the *Missouri Conservationist*, that it sounded like the makings of a great vacation trip to connect the dots." The trip started with a float on the Eleven Point River and included trips to Rocky Falls, Taum Sauk Mountain and several other stops. "By the time we made it to Castor River Shut-Ins that evening, the sun was setting and I had just enough time to take some pictures before dark."



◀ August A. Busch Memorial CA

Jerry Fetsch of St. Charles captured this image of Canada geese at August A. Busch Memorial Conservation Area in mid-June, 2010. Fetsch considers himself an avid photographer and always has his camera with him wherever he goes. "I set out on this day with my parents, who are also avid photographers, to photograph dragonflies," said Fetsch. They decided to move to the next lake "where I saw all these geese standing on the log and knew I had to capture the moment." Fetch said he and his family love to spend time outdoors, especially fishing for crappie at Mark Twain Lake. Fetch also enjoys all disciplines of clay shooting and has served as a volunteer at the Busch Shooting Range. Fetch said that he and his family are really looking forward to photographing bald eagles at Clarksville this winter.



Quail roosting behavior helps them withstand cold winter weather...



...and boredom.

Hunting and Fishing Calendar

FISHING	OPEN	CLOSE
Black Bass (certain Ozark streams, see the <i>Wildlife Code</i>)	5/22/10	2/28/11
impoundments and other streams year-round		
Nongame Fish Giggling	9/15/10	1/31/11
HUNTING	OPEN	CLOSE
Coyotes	5/10/10	3/31/11
Crow	11/01/10	3/03/11
Deer		
Firearms: Late Youth	1/01/11	1/02/11
Archery	11/24/10	1/15/11
Furbearers	11/15/10	1/31/11
Pheasant		
North Zone	11/01/10	1/15/11
Quail	11/01/10	1/15/11
Rabbits	10/01/10	2/15/11
Squirrels	5/22/10	2/15/11
Turkey		
Archery	11/24/10	1/15/11
Waterfowl	please see the <i>Waterfowl Hunting Digest</i> or see www.MissouriConservation.org/7573	
TRAPPING	OPEN	CLOSE
Beavers and Nutria	11/15/10	3/31/11
Furbearers	11/15/10	1/31/11
Otters and Muskrats	11/15/10	2/20/11

For complete information about seasons, limits, methods and restrictions, consult the *Wildlife Code* and the current summaries of *Missouri Hunting and Trapping Regulations* and *Missouri Fishing Regulations*, the *Fall Deer and Turkey Hunting Regulations and Information*, the *Waterfowl Hunting Digest* and the *Migratory Bird Hunting Digest*. For more information visit www.MissouriConservation.org/8707 or permit vendors.

The Department of Conservation's computerized point-of-sale system allows you to purchase or replace your permits through local vendors or by phone. The toll-free number is 800-392-4115. Allow 10 days for delivery of telephone purchases. To purchase permits online go to www.wildlifelicence.com/mo/.

Contributors

CANDICE DAVIS is a media specialist for the Department. She lives in Jackson where she spends her spare time cooking, writing, exploring the outdoors with her family and friends and attempting to create an enjoyable backyard landscape for both her family and local wildlife.



A. J. Hendershott lives in rural Cape Girardeau County. When not hiking, hunting or sketching, he crafts wooden longbows. A.J. is an Outreach and Education regional supervisor for the Conservation Department.

SHANNA RAEKER has been a naturalist with the Conservation Department for more than 10 years. She currently works at Rockwoods Reservation where she enjoys sharing her passion for the outdoors with others. In her spare time, Shanna enjoys hiking, canoeing and exploring nature with her family.



FRANCIS SKALICKY lives in Springfield and has been the metro media specialist for the Department's Southwest Region for the past 15 years. In between his duties of facilitating media coverage for Department-related stories, he tries to get out and enjoy the Ozarks outdoors as much as possible.

ANNA-LISA TUCKER has been a naturalist with the Conservation Department for 10 years. She spent the first three years at Burr Oak Woods Conservation Nature Center in Kansas City and the past seven at Rockwoods Reservation. This will be her eighth season sugaring and teaching Missourians about this tasty resource.



Join us on Facebook

www.facebook.com/MDOnline

Facebook is another great way to get information about nature and outdoor recreation in Missouri.

WHAT IS IT?

Red-winged blackbird

On the back cover and right is a red-winged blackbird by Noppadol Paothong. A common permanent resident of Missouri, they forage for seeds and insects in marshes, moist grasslands, wet roadside ditches and borrow pits along highways. Often they are present in large flocks in crop fields in late summer and fall. During migration and in winter, they roost at night in cat-tails and other tall emergent marsh vegetation, or with other blackbirds in tree roosts that may include millions of individuals.



AGENT NOTES

MDC helps youth discover nature

ONE OF THE most important aspects of an agent's job is hunter education. Missouri is a great place to hunt and we need to make sure we have knowledgeable and safe hunters.

I remember going to hunter education class. I was 12 years old and had read the book a million times because I did not want to fail. When I got there it was a room full of boys and men; I was terrified. I did not say a word the whole time. I passed and have been hunting ever since, but I still remember just sitting there waiting for it to be over.

I later volunteered for an all-girls' camp that taught hunter education with a lot more interactive activities. It was wonderful to see the girls become more confident as

the class went on. When I moved to Missouri and became a conservation agent I saw an opportunity to create a class where young girls could come

and learn in a comfortable, hands-on environment.

The camp is called Missouri Girls Exploring Nature! It is a free three-day, two-night girls' camp held in July in Monroe County by MDC. This camp is aimed at introducing girls ages 11-15 to different outdoors skills in a supportive learning environment. The activities are led by experts, which gives the girls the confidence to explore Missouri's diverse nature.

We have held camp for three successful years and have certified 136 girls in hunter education. We have high hopes of this camp continuing for years to come with the possibility of more locations. When I get letters from these "Missouri Girls," or see the girls out hunting after class, it makes me feel proud to be an agent who helped just a little in their enjoyment of exploring nature.

For more information on the Missouri Girls Exploring Nature! camp, please call the Northeast Regional office at 660-785-2420 or the St. Louis Regional office at 636-441-4554.



Becky Robertson is the conservation agent for St. Charles County. If you would like to contact the agent for your county, phone your regional Conservation office listed on Page 3.

WHAT IS IT?

Our photographers have been busy exploring the intricacies of the Missouri outdoors. See if you can guess this month's natural wonder. The answer is revealed on the inside of this back cover.



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www.MissouriConservation.org/15287

Free to Missouri households

